

Driver Feedback Sign

Health and Safety Information

Refer to the package label and the Material Safety Data Sheet for health, safety, and handling information on the products referenced in this bulletin. For 3M products, if necessary, you may contact our Toxicology/Product Responsibility Department on 01344 858000.

Description

The 3M™ Driver Feedback Sign (DFS) is a vehicle activated sign that provides real-time speed information to drivers. It combines a radar detector activated at vehicle speeds with a high visibility, hybrid display to inform drivers of their actual speed.

The display has a matrix made up of a number of elements, or pixels. Each pixel is covered with 3M™ Fluorescent Diamond Grade reflective sheeting and has an aperture for a Light Emitting Diode (LED).

The front face of the sign box is covered with Diamond Grade reflective sheeting to which customer specified lettering made from 3M™ Scotchcal™ Film can be applied.

The 3M driver feedback sign has the advantage of three sources of illumination to alert the driver of the vehicle speed:

- 1) Reflected ambient light during the day
- 2) Reflected light from approaching headlights when dark
- 3) Energy-smart LEDs activated by a light sensor or programmed commands

The sign display also has the added benefit of fluorescence in dim ambient conditions.

Key Features

- Displays real-time speed of oncoming vehicles
- Flash threshold to alert drivers if travelling above the posted speed limit
- Complete off the shelf product with built-in UK and Ireland compliant radar
- Maximum display speed threshold to discourage “racing” at the sign i.e. display can be set to show nothing higher even when this speed is exceeded
- Meets the requirements of Highways Agency specification TR2136 Issue C
- Hybrid pixels combine Diamond Grade Fluorescent Reflective Sheeting with LED technology to provide high levels of visibility and entrance angles
- Impact resistant, non-glare polycarbonate face with UV inhibitor
- Tamper resistant enclosure
- Optional 24 hour operation or programmable on/off schedule (available on DFS130 only)

Application and Uses

The DFS can be readily integrated with signing systems and is a component that can contribute to a pedestrian safety improvement programme.

The DFS may be used in speed sensitive areas such as school safety zones, village gateways, sharp bends, areas where the speed limit changes etc.

Installation limitations

The radar is “line of sight” and therefore is best suited for straight, level roads.

Contact your 3M sales representative to help determine the chosen site is suitable. Additional information is available in the installation manual available upon request.

Product line

Three model variations are available. All units provide real-time speed feedback, LEDs which flash when a speed threshold is exceeded, have a maximum display speed and manual key operating switch.

Product Model	Description
DFS110	On/off manual key control Best suited for 24 hour operation
DFS120	Interfaces with a timer device allowing preset schedules
DFS130	Software allows schedules to be programmed from a remote location with a PC User can define - on/off times - maximum display speed - display flash speed Requires: - SIM card - network coverage at site - analogue line

Vandal Resistance

The dynamic display is covered with reinforced polycarbonate plastic to protect it against impact.

The polycarbonate plastic is covered with 3M™ Protective Overlay Film Series 1160 to provide excellent resistance to graffiti. This overlay can also be applied to the static part of the sign to give it the same resistance to graffiti.

Warranted Durability

The DFS benefits from a 3M 12 months warranty including parts and labour. The warranty does not include damage due to collisions, vandalism, etc.

Storage

Store the DFS in a clean, dry area away from heat sources.

Cleaning

Hand wash with sponge, cloth, or soft brush using detergent and water. The detergent must be non-abrasive, contain no strong solvents and have a relatively neutral pH. Rinse thoroughly after cleaning.

To remove grease, oil or tar, use a cloth moistened with heptane, VM&P naphtha or mineral spirits. Wash with detergent and water and rinse thoroughly.

3M Related Literature

Listed below is related 3M technical literature that may be of interest.

Manuals	Date of Issue
Dynamic Message Systems Driver Feedback Sign User Manual	August 2003
Dynamic Message Systems Driver Feedback Sign Service Manual	August 2003
Dynamic Message Systems Driver Feedback Sign Installation Manual	August 2003

Main Characteristics

Technical Features	Advantages/Benefits
Hybrid Pixels:	Pixels: 3M™ LED display technology combines 3M™ Diamond Grade™ Fluorescent Yellow Green Reflective Sheeting and a LED into each hybrid pixel. Pixel colour reliability: Fluorescent yellow green will not fade for 10 years. Reflective pixel size: 28 x 34 mm Numeric character height: 30.5 cm Daytime Visibility: Diamond Grade fluorescent yellow green reflective sheeting applied to each pixel provides industry-leading daytime visibility Nighttime Visibility: LED with Diamond Grade fluorescent yellow green reflective sheeting combine for excellent nighttime visibility. Viewing Angle: Hybrid pixels provide expanded viewing angles in daytime and nighttime. Modular Construction: each component is of modular construction to provide easy maintenance
Display	Number Display: The display is updated twice/second and provides real-time feedback about the speed of the vehicle to the driver. Programmable LED Flash Speed: LEDs flash when the approaching vehicle speed exceeds the programmable LED Flash Speed by 1 mph. Programmable Maximum Display Speed: The maximum displayed speed can be programmed to limit drivers from racing against the sign display.
Energy Smart Illumination using InGaAlP LED controlled by a photocell	Low energy consumption: The average power consumption is only 17 Watts for 8 hours of operation with moderate traffic volume. Increased LED reliability: The intensity of the LEDs is dependent upon ambient conditions. A photocell controls the intensity of the LEDs and the optical performance of the unit meets the requirements of Highways Agency specification TR2136 Issue C. LED Output: 22 degrees angularity, 1.4 Candela LED
IP 55 Protection	Environmental Protection: The unit is IP55 rated in alignment with European requirements.
Radar	Microwave Radar: The 100mW EIRP radar operates within the UK frequency band of 24.150GHz to 24.250GHz. The radar is accurate to +/- 1mph and vehicles can be detected from a distance of 150metres depending on environmental conditions.
Power Requirements and Specifications	European Power Requirements: The internal power supply is rated for 90-260 VAC for connection to European public power grids and meets the European requirements for fluctuation of the supply voltage, for frequency tolerances and for transient protection.
Housing	The cover protecting the electronics is made of heavy-duty, seamless aluminium. The unit is 600mm wide by 900mm high by 150mm deep and weighs 25kgs. The door of the unit is hinged on the left hand side to enable easy access to the unit and is sealed using a tamper proof design.

Important Notice to Purchaser

Technical information provided by 3M is based on experience and/or tests believed to be reliable but its accuracy is not guaranteed and the results may not be relevant to every user's application. 3M does not accept responsibility or liability, direct or consequential, arising from reliance upon any information provided and the user should determine the suitability of the products for their intended use.

Nothing in this statement will be deemed to exclude or restrict 3M's liability for death or personal injury arising from its negligence.

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If any goods supplied or processed by or on behalf of 3M prove on inspection to be defective in material or workmanship 3M will (at its option) replace the same or refund to the Buyer the price of the goods or services.

Except as set out above, all warranties and conditions, whether expressed or implied, statutory or otherwise are excluded to the fullest extent permissible at law.

Technical Assistance

For help on specific questions relating to 3M Traffic Safety Systems products, contact your local Technical Service Representative for the UK & Ireland.

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